

**Amendments to the Claims:**

This listing of claims replaces all prior versions and listings of claims in this application.

**Listing of Claims:**

1-19. (CANCELED)

20. (NEW) A process for production of lactic acid product from a mixture containing free lactic acid and dissolved lactate salt, comprising:

    providing a mixture comprising free lactic acid and dissolved lactate salts;

    filtering the mixture;

    extracting lactic acid using an extractant to form an extraction phase and a raffinate stream;

    forming lactic acid oligomer from the extraction phase;

    forming lactide; and

    separating the extractant from the lactide.

21. (NEW) The process of claim 20, further comprising:

    adding a catalyst for lactide formation; and

    recovering the catalyst.

22. (NEW) The process of claim 20, wherein the extractant is recycled for use in the extraction phase after separation from the lactide.

23. (NEW) The process of claim 20, wherein the raffinate stream is recycled for use in a fermentation broth.

24. (NEW) The process of claim 20, wherein the extraction is conducted at a temperature between 30°C and 50°C.

25. (NEW) The process of claim 20, wherein the mixture comprising lactic acid and lactate salts is provided at a pH of 3.5 to 4.3.

26. (NEW) The process of claim 20, wherein the extractant is a water insoluble amine.

27. (NEW) A process for production of lactic acid product from a mixture containing free lactic acid and dissolved lactate salt, comprising:

providing a mixture comprising free lactic acid and dissolved lactate salts;

extracting lactic acid using an extractant to form an extraction phase and a raffinate stream;

forming lactic acid oligomer from the extraction phase;

separating the extractant from the lactic acid oligomer; and

forming lactide.

28. (NEW) The process of claim 27, wherein separating the extractant from the lactic acid oligomer comprises cooling the lactic acid oligomer and extracting solvent mixture to about 0°C to 60°C.

29. (NEW) The process of claim 28, further comprising adding a phase splitting compound to generate two phases.

30. (NEW) The process of claim 28, wherein the mixture comprising lactic acid and lactate salts comprises at least about 25 g/L free lactic acid.

31. (NEW) A process for production of lactic acid product from a mixture containing free lactic acid and dissolved lactate salt, comprising:

providing a mixture comprising free lactic acid and dissolved lactate salts;

adsorbing lactic acid from the mixture using an adsorbent;

eluting lactic acid from the adsorbent;

forming lactic acid oligomer; and

forming lactide.

32. (NEW) The process of claim 31, wherein the adsorbent comprises a basic anion exchange resin.

33. (NEW) The process of claim 31, wherein the adsorbent has a capacity of at least 0.10 grams lactic acid per gram dry resin.

34. (NEW) The process of claim 31, wherein eluting lactic acid comprising contacting the adsorbent with a polar liquid.

35. (NEW) The process of claim 31, wherein eluting lactic acid comprises evaporation of the lactic acid from the adsorbent.